

REMARKS/ARGUMENTS

The Office Action mailed February 2, 2005 has been carefully reviewed. Reconsideration of this application, as amended and in view of the following remarks, is respectfully requested. The claims presented for examination are: claims 1-47.

Drawings

In numbered paragraph 1 of the Office Action mailed February 2, 2005, the drawings were objected to because they include the reference character "212" in Figure 2 that was not mentioned in the description and because they include the reference characters "515" and "516" in Figure 5 that were not mentioned in the description. A separate letter to the Office Draftsman submits new drawings with a change in Figure 2 that eliminates the reference character "212" and changes the reference characters "515" and "516" in Figure 5. The reference character "515" is now used to designate the turbine. The reference character "516" has now been eliminated. The specification has been amended to use the reference character "515" to designate the turbine. Applicants believe the new drawings and the amendments to the specification overcome the objection to the drawings stated in numbered paragraph 1 of the Office Action mailed February 2, 2005.

In numbered paragraph 2 of the Office Action mailed February 2, 2005, the drawings were objected to because in Figure 5, allegedly the reference character "506" was used to designate both "exhaust gas" and "air intake" and because in Figure 6 the reference character "620" was used to designate both "engine starter" and "valve in the intake passage." A separate letter to the Office Draftsman submits new drawings that have a change in Figure 6 wherein a new reference character "621" is used to designate the "engine starter" instead of the

reference character "620." The specification has been amended to use the reference character "621" to designate the "engine starter." Applicants submit that Figure 5 correctly shows the reference character "506" to designate the exhaust gases. As described in amended paragraph [0032] and shown in Figure 5, first, the exhaust gases "506" from the piston engine are provided to the turbine engine 502 and turbine 515. Next the exhaust gases 506 from the turbine 515 are used to compress the air before it goes into the piston engine 501. Applicants believe the new drawings and the amendments to the specification overcome the objection to the drawings stated in numbered paragraph 2 of the Office Action mailed February 2, 2005.

In numbered paragraph 3 of the Office Action mailed February 2, 2005, the drawings were objected to because in Figure 5 there was no reference character designating the "turbine 507." A separate letter to the Office Draftsman submits new drawings. The new drawings have a change in Figure 5 wherein the reference character "515" is now used to designate the "turbine." Since the reference numeral 507 is used in the description to describe the compressor housing, the new drawings use the reference character "515" to designate the "turbine." The specification has been amended to use the reference character "515" to designate the turbine. Applicants believe the new drawings and the amendments to the specification overcome the objection to the drawings stated in numbered paragraph 2 of the Office Action mailed February 3, 2005.

In numbered paragraph 4 of the Office Action mailed February 2, 2005, the drawings were objected to and the statements were made, "The drawings must show every feature of the invention specified in the claims. Therefore, the "furnace" (See claim 40), "a boiler" (See claim 41), "a smelter" (See claim 42, and "bypass valve" (See claim 44, lines 1-2) must be shown of the features(s) canceled from the claims(s)." Applicants respectfully traverse this objection to the

drawings because the claims involved are method claims which involve steps rather than structure. Applicants submit that the requirement, "The drawings must show every feature of the invention specified in the claims" applies to apparatus claims rather than method claims.

Specification

The specification has been amended to use the reference character "515" to designate the turbine. The amendment to the specification was made to overcome the objection to the drawings stated in numbered paragraph 1 and in numbered paragraph 3 of the Office Action mailed February 2, 2005.

The specification has been amended to use the reference character "621" to designate the "engine starter." The amendment to the specification was made to overcome the objection to the drawings stated in numbered paragraph 2 of the Office Action mailed February 2, 2005.

On page 4 of the Office Action mailed February 2, 2005, the specification was objected to because of the following informalities:

- On page 7, Paragraph [0016], line 6, "bypass 211, and preheating system 212" should be replaced by - - bypass 210, and preheating system 211 - -.

The specification has been amended on page 7, Paragraph [0016], line 6, to change the relevant phrase to - - bypass 210, and preheating system 211 - -.

Applicants believe the amendments to the specification and the new drawings overcome the objection to the specification stated on page 4 of the Office Action mailed February 2, 2005.

Objection to Claims

On page 5 of the Office Action mailed February 2, 2005, claims 1 and 8 were objected to because of stated informalities. Claim 1 has been amended to change "supercharge" to "supercharging." Claim 8 has been amended to change "a supercharger for supercharge" to "a supercharger for supercharging."

Applicants believe the amendments to the claims overcome the objections to the claims stated on page 5 of the Office Action mailed February 2, 2005.

35 USC 102 Rejection

On pages 5 through 11 of the Office Action mailed February 2, 2005, claims 1-4, 8-10, 16-23, 25, 26, 28-30, 32, 33, 35, and 36-47 were rejected under 35 U.S.C. 102(b) as being anticipated by the Melchior (Patent Number 4,233,815) reference.

Applicants submit that the invention claimed in claims 1-47 is not anticipated by the Melchior reference. The standard for a 35 USC §102 rejection is stated in Verdegaal Bros. v. Union Oil Co of California, 814 F.2nd 628, 631 USPQ 1051, 1053 (Fed. Cir. 1987), "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." The Melchior reference does not show various structural and step elements of claims 1-47. Nor does the Melchior reference show and the combination of structural and step elements in claims 1-47.

The Melchior Reference

The Melchior Reference shows: "An internal combustion engine of the expansible chamber type and preferably a diesel engine is equipped with a turbo-compressor unit, comprising at least one compressor and at least one turbine, and at least one bypass pipe enabling direct and permanent passage for the air delivered through the compressor to the turbine inlet. The diesel engine is supercharged by the compressor driven by the turbine." Abstract of the Melchior Reference.

The structure of the Melchior Reference is described in col. 7, lines 6-14 as follows: "As shown in FIGS. 1-3, the diesel engine 1 is supercharged by a supercharging unit, with one compression stage, which comprises a compressor 2, supplying fresh air in parallel to the engine 1 and to a combustion chamber 3,

and a turbine 4 supplied with combustion gas by the engine 1 and by the above said combustion chamber 3. The turbine 4 rotates the compressor 2 through a connecting shaft 5.”

Applicants’ claimed Invention

The structure of Applicants’ claimed invention comprises (A) the following individual structural elements and (B) the following combination of structural elements: “fuel, a first stage piston engine for combusting said fuel in a first stage, said first stage piston engine producing piston engine exhaust gases with said piston engine exhaust gases containing said fuel; a second stage turbine engine for combusting said fuel contained in said piston engine exhaust gases in a second stage, said second stage turbine engine producing turbine engine exhaust gases; a supercharger for supercharging said piston engine using said turbine engine exhaust gases, and means for directing said turbine exhaust gases from said second stage turbine engine into said supercharger.” In Applicants’ claimed invention, a combustion engine method provides increased fuel efficiency and reduces polluting exhaust emissions by burning fuel in two stages by combusting said fuel in a piston engine in a first stage, said step of combusting said fuel in a piston engine in a first stage producing piston engine exhaust gases, said piston engine exhaust gases containing said fuel; combusting said fuel contained in said piston engine exhaust gases in a second stage turbine engine, said step of combusting said fuel contained in said piston engine exhaust gases in a second stage turbine engine producing turbine engine exhaust gases; and using said turbine engine exhaust gases to supercharge said piston engine by directing said turbine engine exhaust gases into said piston engine.

Since neither the various structural and step elements of claims 1-47 nor the combination of structural and step elements in claims 1-47 described above

are found in the Melchior reference, the Melchior reference does not support a 35 USC §102 rejection.

35 USC 103 Rejection - Melchior in view of Marin et al

On pages 11 and 12 of the Office Action mailed February 2, 2005, claims 5-7, 11-15, and 36-37 were rejected under 35 U.S.C. 102(b) or under 35 U.S.C. 103(a) as being anticipated or obvious over the Melchior reference in view of the Marin et al reference (Pub. Number 2003/0101725).

Applicants submit that claims 5-7, 11-15, and 36-37 are patentable and that the Melchior and Marin et al references would not support a 35 U.S.C. 102(b) or 35 USC §103(a) rejection. As explained above, neither the various structural and step elements of claims 1-47 nor the combination of structural and step elements in claims 1-47 described above are found in the Melchior reference. Further, neither the various structural and step elements of claims 1-47 nor the combination of structural and step elements in claims 1-47 described above are found in the Marin reference; therefore, the Melchior reference and Marin et al reference do not support a 35 USC §102 rejection.

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) include "Ascertaining the differences between the prior art and the claims at issue." As explained above, various structural and step elements of independent claims 1, 8, and 16 are not found in the Melchior reference. Further, the various structural and step elements of independent claims 1, 8, and 16 are not found in the Marin et al reference.

Since both references fail to show the various structural and step elements, there can be no combination of the two references that would show Applicant's invention defined by rejected claims 5-7, 11-15, and 36-37 and render it unpatentable. There is no combination of the Melchior reference and the Marin et

al reference that would produce the combination of elements of Applicants' rejected claims 5-7, 11-15, and 36-37. Further, there is no teaching of combining the Melchior reference and the Marin et al reference to meet Applicants' rejected claims 5-7, 11-15, and 36-37. Thus, the combination of references fails to support a rejection of the claims under 35 USC 103, and the rejection should be withdrawn.

35 USC 103 Rejection - Melchior in view of Becker et al

On page 13 of the Office Action mailed February 2, 2005, claims 24 and 27 were rejected under 35 U.S.C. 103(a) as being obvious over the Melchior reference in view of the Becker et al reference (Patent Number 6,089,855).

Applicants submit that claims 24 and 27 are patentable and that the Melchior and Becker et al references would not support a 35 USC §103(a) rejection. As explained above, neither the various structural and step elements of claims 1-47 nor the combination of structural and step elements in claims 1-47 described above are found in the Melchior reference. Further neither the various structural and step elements of claims 1-47 nor the combination of structural and step elements in claims 1-47 described above are found in the Becker reference; therefore, the Melchior reference and Becker et al reference do not support a 35 USC §102 rejection.

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) include "Ascertaining the differences between the prior art and the claims at issue." As explained above, various structural and step elements of independent claims 1, 8, and 16 are not found in the Melchior reference. Further, the various structural and step elements of independent claims 1, 8, and 16 are not found in the Becker et al reference.

Since both references fail to show the various structural and step elements, there can be no combination of the two references that would show Applicant's invention defined by rejected claims 24 and 27 and render it unpatentable. There is no combination of the Melchior reference and the Becker et al reference that would produce the combination of elements of Applicants' rejected claims 24 and 27. Further, there is no teaching of combining the Melchior reference and the Becker et al reference to meet Applicants' rejected claims 24 and 27. Thus, the combination of references fails to support a rejection of the claims under 35 USC 103, and the rejection should be withdrawn.

35 USC 103 Rejection - Melchior in view of EUREKALERT or Sekar et al

On pages 13 and 14 of the Office Action mailed February 2, 2005, claims 31 and 34 were rejected under 35 U.S.C. 103(a) as being obvious over the Melchior reference in view of either the EUREKALERT or Sekar et al references.

Applicants submit that claims 31 and 34 are patentable and that the Melchior and EUREKALERT or Sekar et al references would not support a 35 USC §103(a) rejection. As explained above, neither the various structural and step elements of claims 1-47 nor the combination of structural and step elements in claims 1-47 described above are found in the Melchior reference. Further neither the various structural and step elements of claims 1-47 nor the combination of structural and step elements in claims 1-47 described above are found in the Becker reference; therefore, the Melchior reference and EUREKALERT or Sekar et al reference do not support a 35 USC §102 rejection.

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) include "Ascertaining the differences between the prior art and the claims at issue." As explained above, various structural and step elements of independent claims 1, 8, and 16 are not found in

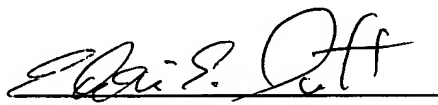
the Melchior reference. Further, the various structural and step elements of independent claims 1, 8, and 16 are not found in the EUREKALERT or Sekar et al reference.

Since both references fail to show the various structural and step elements, there can be no combination of the two references that would show Applicant's invention defined by rejected claims 31 and 34 and render it unpatentable. There is no combination of the Melchior reference and the EUREKALERT or Sekar et al reference that would produce the combination of elements of Applicants' rejected claims 31 and 34. Further, there is no teaching of combining the Melchior reference and the EUREKALERT or Sekar et al reference to meet Applicants' rejected claims 31 and 34. Thus, the combination of references fails to support a rejection of the claims under 35 USC 103, and the rejection should be withdrawn.

SUMMARY

The undersigned respectfully submits that, in view of the foregoing amendments and the foregoing remarks, the rejections of the claims raised in the Office Action dated February 2, 2005 have been fully addressed and overcome, and the present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that the claims be allowed, and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,



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AMENDMENTS TO THE DRAWINGS

A separate letter to the Office Draftsman is enclosed submitting three (3) sheets [2/9, 5/9, and 6/9] of new drawings.